



BLACKBERRY PLANT NAMED 'DRISCOLL SONOMA'

1. BACKGROUND OF THE INVENTION

[0001] This invention relates to a new cultivar of blackberry called 'Driscoll Sonoma'. The new cultivar was developed from hybridization of the patented female cultivar 'Navaho', U.S. Plant Patent No. 6679, with the unpatented male cultivar 'Hull Thornless'. The parents were crossed in Spring 1991 whereafter fruit and seed were collected to produce seedlings for field planting in Watsonville, California in 1991. The new cultivar was selected in July 1993 for its good flavor, thornless canes, season of production and firm, attractive fruit. The cultivar has been asexually propagated, and reproduced true to type plants by *in vitro* shoot tip culture. The cultivar has been asexually propagated and reproduced true-to-type plants by *in vitro* shoot tip culture.

1.1 LATIN NAME OF THE GENUS AND SPECIES OF THE PLANT CLAIMED

[0002] The variety is botanically identified as *Rubus* L. subgenus *Rubus*.

2. SUMMARY OF THE INVENTION

[0003] The present invention provides a new and distinct blackberry cultivar named 'Driscoll Sonoma'. The variety is botanically identified as *Rubus* L. subgenus *Rubus*. The new cultivar produces a floricane crop which begins in early July and continues until mid-September. The new blackberry variety is distinguished from other varieties by a number of characteristics as set forth in Table 1. In particular, the new cultivar is distinguished by its thornless canes with fruit of excellent flavor and firmness which ripens at a time of the year when few other similar cultivars exist.

3. COMPARISON TO SIMILAR VARIETIES

[0004] The varieties that we believe to be similar to 'Driscoll Sonoma' from those known to us are the male parent 'Hull Thornless' and 'Chester', both unpatented cultivars. 'Driscoll Sonoma' is particularly different from these cultivars by having slightly larger, more uniform shaped fruit, by ripening earlier, and having a less acidic flavor. Further detailed comparison to 'Chester' is presented in Table 1.

4. BRIEF DESCRIPTION OF THE DRAWINGS

[0005] The accompanying photographs show typical specimens of the fruit, leaves and shoot of the new cultivar, in color as nearly true as reasonably possible in color illustrations of this type.

[0006] **Fig. 1** is a photograph showing a primocane shoot and mature leaf of 'Driscoll Sonoma'.

[0007] **Fig. 2** is a photograph of a 'Driscoll Sonoma' fruiting lateral with fruit in various stages of development.

5. DESCRIPTION OF THE NEW VARIETY

[0008] The following detailed description of the new blackberry cultivar, 'Driscoll Sonoma', is based upon recorded observations of plants and fruit grown between 1996 and 2000 in Watsonville, California, and is believed to apply to plants of the 'Driscoll Sonoma' cultivar grown in similar conditions of soil and climate elsewhere. The description is based on recorded observations of 2-5 year old plants. Plants were grown in soil previously pre-plant fumigated and regularly fertilized and irrigated with drip irrigation. This description is in accordance with terminology used by the International Union for the Protection of New Varieties of Plants (UPOV). Throughout this specification, color names beginning with a small letter signify that the name of the color, as used in common speech, is aptly descriptive. Color data beginning with a capital letter and followed by an alphanumeric code indicate the most similar color designations as provided by the Royal Horticultural Society (RHS) Colour Chart published by the Royal Horticultural Society of London, England. Color designations, color descriptions, and other phenotypical descriptions may deviate from the stated values and descriptions depending upon variation in environmental, seasonal, climatic and cultural conditions.

5.1. CHARACTERISTICS OF THE NEW VARIETY

[0009] 'Driscoll Sonoma' can be characterized by numerous characteristics. The average priomcane length is 213 cm. The primocane color is N186C (in RHS Colour Chart) on the exposed side and 144A (in RHS Colour Chart) on the shaded side. The floriance color is 146C (in RHS Colour Chart) on both the exposed and shaded sides. The relief between the veins of the leaf of 'Driscoll Sonoma' is weak, meaning there are very minor undulations between the veins and the leaves are nearly flat. The leaf surface has a few small soft hairs on the upper and lower surfaces. The petiole color is N186C (in RHS Colour Chart). The stipule length averages 13 mm, width 1.2 mm, and color 144A (in RHS Colour Chart).

Colour Chart). Bud burst in Watsonville, California is late relative to most cultivars. Usually bud burst occurs from mid March to early April. Flowering lasts for 3-5 weeks and usually begins in late April to early May. The petals of 'Driscoll Sonoma' are five per flower, ovate in shape, and N155B in color (in RHS Colour Chart). The average length of the pedicel is short, 25 mm. The sepals of 'Driscoll Sonoma' are five per flower, and 138B in color (in RHS Colour Chart). The seeds weigh about 3.4 mg and are approximately 3.2 mm long and about 1.9 mm wide. 'Driscoll Sonoma' is most suitable for market use as a highly flavored fresh market cultivar. 'Driscoll Sonoma' has been successfully shipped for long distance under refrigerated storage and has remained in good condition for up to about 10 days when kept under cold storage conditions.

[0010] Table 1 provides information on the plant and fruit characteristics of the new blackberry cultivar, 'Driscoll Sonoma', compared with characteristics of the unpatented blackberry cultivars, 'Olallie' and 'Chester'. Both 'Olallie' and 'Chester' are currently important cultivars for fresh market shipping, and thus are comparable to the proposed use of the new invention, 'Driscoll Sonoma'. Observations of 'Driscoll Sonoma' and 'Chester' were taken in side-by-side comparison in 1999 and 2000. The yield of 'Driscoll Sonoma' is medium, meaning an average yield of about 14,000 pounds per acre in comparison to Olallie which averages around 21,000 pounds per acre.

[0011] The new blackberry cultivar is particularly characterized and distinguished from other cultivars by its fruit with excellent flavor and shipping quality. The fruit of 'Driscoll Sonoma' is very attractive with a solid black color that rarely shows post harvest drupelet color reversion.

[0012] The canes of 'Driscoll Sonoma' are thornless and of low to moderate vigor until well established. Yield of the new cultivar is moderate in comparison with other varieties.

[0013] Driscoll Sonoma is distinguished from its pollen parent, 'Hull Thornless', by being earlier, less vigorous, and having larger less acidic fruit. Driscoll Sonoma is distinguished from its seed parent, 'Navaho', by having greater vigor and larger fruit.

TABLE 1
PLANT CHARACTERISTICS OF 'DRISCOLL SONOMA'

Driscoll Sonoma	Olallie	Chester
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GENERAL

Vigor
 Growth habit
 Productivity
 Self fruitfulness
 Number of young shoots

Low-moderate	Moderate-high	high
semi-upright	trailing	semi-upright
medium	high	high
yes	yes	yes
medium	medium	medium

CANES

Primocanes
 Anthocyanin coloration
 Spines
 color
 attitude of tip
 texture
 presence and distribution on
 petioles
 density in central third of shoot
 Internodal distance (cm) - central
 third of mature cane
 Glaucosity on full grown shoot
 Strength of full grown shoot
 Cane cross section

absent	present	present
absent	present	absent
-	purple	-
-	horizontal	-
-	heavy	-
absent	present; irregularly distributed	absent
-	medium	-
3	2.6	3.1
weak	weak	weak
strong	medium	strong
angular	rounded to angular	angular to grooved

LEAVES

Relief between veins
 Number of leaflets
 Leaf color
 upper side
 underside
 Glossiness of upper surface
 Leaf cross section
 Terminal leaflet
 length (cm)
 width (cm)
 shape
 tip
 base
 margin

medium	medium	medium
usually 5	usually 3	usually 5
medium	medium	light
139A, 147A	137A, 137B	147A
147B	147B	146A
medium	medium	dull
concave	concave-flat	concave

Lateral leaflet
 overlap of lateral leaflets
 length (cm)
 width (cm)

10.8	8.9	11.1
8.5	7.6	9
ovate	cordate	cordate
acuminate	acuminate	acuminate
rounded	cordate	cordate
double serrate	double serrate	double serrate

overlapping	overlapping	overlapping
10.3	8.7	10.2
7.1	6.1	7.1

	shape	ovate	ovate	ovate
	tip	acuminate	acuminate	acute
	base	rounded to acute	acute	acute
	margin	double serrate	double serrate	serrate
Petiole				
	mean length (cm)	9.4	5.3	7.9
	range	7.3-11.1	3.6-8.7	3.9-10.2
	pigmentation of upper surface	reddish	green - slightly pink	purple
	pigmentation of underside	green	green - slightly pink	green - pinkish
	Length of stalklet	short	very short	medium
	Rachis length (cm) between terminal and adjacent lateral leaflets	3.8	2.8	3.1
	Stipule orientation	erect	variable; clasping to erect	erect

FLOWERS

Time of bud burst	late	early	late
Time of beginning of flowering	late	early	late
Flower size	medium-large	small to medium	small to medium
Petal size			
length (mm)	19.6	16.5	18.3
width (mm)	14	11.7	10.9
Anthocyanin color of pedicel	absent	absent	present
Intensity of pedicel coloration	-	-	weak
Length of pedicel	short	long	short
Flower number (third node from tip of lateral)	1.25	3.6	2

late	early	late
late	early	late
medium-large	small to medium	small to medium

19.6	16.5	18.3
14	11.7	10.9
absent	absent	present
-	-	weak
short	long	short
1.25	3.6	2

FRUIT

Harvest season	mid-late	early	mid-late
Dimensions	3.6	5.2	3.2
weight (g/fruit)			
size	medium-small	medium	small
length (cm)	2.4	3.3	1.9
width (cm)	2.1	1.4	1.9
Fruiting lateral length (in mid cane)	medium-long	medium	medium - long
mean number of fruit per lateral range	11.6	6.2	22.8
range	8-16	3-9	17-40
Shape	ovate to elliptic longer than broad	narrow ovate much longer than broad	round to ovate as long as broad
Color	black	purple-black to black	black
immature	183A	178A - 183B	184A
maturing	187A	187A	200A - 202A
mature	202A	200A	202A
Firmness	medium	medium	firm
Glossiness	medium	medium - strong	medium
Soluble solids	12	9.7	9.9
Titratable acidity (% as citric acid) (ml of added 0.1N NaOH to pH 8.1)	9	13.3	9.9
Number of drupelets per fruit	60	86	40

mid-late	early	mid-late
3.6	5.2	3.2
medium-small	medium	small
2.4	3.3	1.9
2.1	1.4	1.9
medium-long	medium	medium - long
11.6	6.2	22.8
8-16	3-9	17-40
ovate to elliptic longer than broad	narrow ovate much longer than broad	round to ovate as long as broad
black	purple-black to black	black
183A	178A - 183B	184A
187A	187A	200A - 202A
202A	200A	202A
medium	medium	firm
medium	medium - strong	medium
12	9.7	9.9
9	13.3	9.9
60	86	40

5.2. NUCLEIC ACID FINGERPRINTING

[0014] Distinctive patterns of polymorphism can be detected using a variety of nucleic acid analysis methods. In one non-limiting example, molecular genetic maps can be produced using random amplified polymorphic DNA (RAPD) (Williams et al., 1990, "DNA polymorphisms amplified by arbitrary primers are useful as genetic markers", Nucleic Acids Res. 18(22):6531-5). Using a variety of oligonucleotide primers, alone or in combination, RAPD analysis of Driscoll Sonoma, Chester, and Olallie yielded DNA fragment patterns that uniquely distinguish each of these genetically distinct genotypes.